CLAIMS:

1. A data signal receiver for an electromagnetic wave signal including a pilot carrier and vestigial sideband modulation of a suppressed carrier of the same frequency and phase as said pilot carrier, said vestigial sideband modulation being in accordance with a baseband signal having a uniform symbol rate substantially 684 times the horizontal scan line rate of an NTSC television signal that is apt to accompany said electromagnetic wave signal as a co-channel interfering signal, said baseband signal composed of consecutive data segments each consisting of a prescribed integral number of symbol epochs, said consecutive data segments being divided into contiguous data frames each consisting of a prescribed integral number M of contiguous ones of said data segments, each said data frame characterized by beginning with a data frame header including a plurality N in number of contiguous ones of said data segments and concluding with a plurality (M-N) in number of said data segments including consecutive multi-level symbols used for transmitting data, said data segments used for special purposes in each said data frame including a first ghost-cancellation reference signal and a second ghost-cancellation reference signal at a prescribed time interval thereafter, which said first and second ghost-cancellation reference signal exhibit respective variations that are complementary to each other, said data signal receiver comprising:

circuitry for selecting said electromagnetic wave signal, converting the frequencies of said electromagnetic wave signal after its selection, and amplifying said electromagnetic wave signal after its selection and conversion in frequency;

circuitry for synchrodyning said electromagnetic wave signal to baseband after its selection, conversion in frequency and amplification and supplying digitized samples of a baseband signal resulting from synchrodyning said electromagnetic wave signal to baseband;

an adaptive equalizer for receiving said samples of a baseband signal resulting from synchrodyning said electromagnetic wave signal to baseband, and supplying an equalizer response to those received samples as weighted by kernel weights that are electrically adjustable;

circuitry for regenerating transmitted data from said equalizer response;

a comb filter for differentially delaying said equalizer response, so said first ghost-cancellation reference signal in the more delayed equalizer response occurs simultaneously with said second ghost-cancellation reference signal in the less delayed equalizer response, and subtractively combining said more delayed equalizer response and said less delayed equalizer response to generate a comb filter response; and

a computer responsive to selected portions of said comb filter response including the result of subtractively combining said first and second ghost-cancellation reference signals, for performing initial electrical adjustments of the kernel weights of said adaptive equalizer whenever said data signal receiver is initially operated after a time of inoperation or whenever said electromagnetic wave signal is initially selected.

2. The data signal receiver of claim 1, wherein said comb filter differentially delays said equalizer response by substantially 1368 symbol epochs to generate said more delayed equalizer response and said less delayed equalizer response for being subtractively combined to generate said comb filter response.

3. The data signal receiver of claim 1, in which during continued operation of said said data signal receiver said computer continues to electrically adjust the kernel weights of said adaptive equalizer responsive to selected portions of said comb filter response including the result of subtractively combining said first and second ghost-cancellation reference signals.

4. The data signal receiver of claim 3, wherein said comb filter differentially delays said equalizer response by substantially 1368 symbol epochs to generate said more delayed equalizer response and said less delayed equalizer response for being subtractively combined to generate said comb filter response.

5. The data signal receiver of claim 1, in which during continued operation of said said data signal receiver said computer electrically adjusts the kernel weights of said adaptive equalizer responsive to said comb filter response on a decision-directed basis.

6. The data signal receiver of claim 5, wherein said comb filter differentially delays said equalizer response by substantially 1368 symbol epochs to generate said more delayed equalizer response and said less delayed equalizer response for being subtractively combined to generate said comb filter response.

7. An electromagnetic wave signal comprising vestigial sideband modulation of a suppressed carrier in accordance with a baseband signal having a uniform baud rate or

symbol rate substantially 684 times the horizontal scan line rate of an NTSC television signal that is apt to accompany said electromagnetic wave signal as a co-channel interfering signal, said baseband signal composed of consecutive data segments each consisting of a prescribed integral number of symbol epochs, said consecutive data segments being divided into contiguous data frames each consisting of a prescribed integral number M of contiguous ones of said data segments, each said data frame characterized by beginning with a data frame header including a plurality N in number of contiguous ones of said data segments and concluding with a plurality (M-N) in number of said data segments including consecutive multi-level symbols used for transmitting data, said data frame header in each said data frame including a first ghost-cancellation reference signal and a second ghost-cancellation reference signal beginning substantially 1368 symbol epochs later than said first ghost-cancellation reference signal, which said first and second ghost-cancellation reference signal exhibit respective variations that are complementary to each other.

8. The electromagnetic wave signal of claim 7, wherein each of said plurality (M-N) in number of said data segments composed of consecutive multi-level symbols used for transmitting data begins with a four-symbol data-segment-synchronizing code.

9. The electromagnetic wave signal of claim 8, wherein said number M has a value equal to 1254 and said number N equals four.

10. The electromagnetic wave signal of claim 8, wherein said number M has a value equal to 1294 and said number N equals four.

11. The electromagnetic wave signal of claim 8, wherein said number M has a value equal to 1295 and said number N equals five.

12. The electromagnetic wave signal of claim 7, wherein said number M has a value equal to 1302 and said number N equals four.

13. The electromagnetic wave signal of claim 7, wherein said number M has a value equal to 1301 and said number N equals five.

14. The electromagnetic wave signal of claim 7, wherein said first ghost-cancellation reference signal is composed of a plurality of PN sequences that are orthogonal to each other and contain equal numbers of symbols.

15. The electromagnetic wave signal of claim 14, wherein said number N has a value at least four, and wherein said first ghost-cancellation reference signal begins before the end of the first data segment of each data frame.

16. The electromagnetic wave signal of claim 14, wherein said number N has a value at least four, and wherein said first ghost-cancellation reference signal begins at the beginning of the second data segment of each data frame.

17. The electromagnetic wave signal of claim 14, wherein said number N has a value at least four, and wherein said first ghost-cancellation reference signal begins a few symbol epochs after the beginning of the second data segment of each data frame.

18. The electromagnetic wave signal of claim 7, wherein a frame start signal is included in the first data segment of each data frame, said first ghost-cancellation reference signal begins after said frame start signal, and said second ghost-cancellation reference signal begins substantially 1368 symbol epochs after said first ghost-cancellation reference signal begins.

19. The electromagnetic wave signal of claim 18, wherein said number N has a value at least four, and wherein said first ghost-cancellation reference signal begins before the end of the first data segment of each data frame.

20. The electromagnetic wave signal of claim 18, wherein said number N has a value at least four, and wherein said first ghost-cancellation reference signal begins at the beginning of the second data segment of each data frame.

21. The electromagnetic wave signal of claim 18, wherein said number N has a value at least four, and wherein said first ghost-cancellation reference signal begins a few symbol epochs after the beginning of the second data segment of each data frame.

22. The electromagnetic wave signal of claim 18, wherein said frame start signal comprises a pseudo-random noise sequence with a baud rate or symbol rate substantially 342 times the horizontal scan line rate of an NTSC television signal.

23. The electromagnetic wave signal of claim 22, wherein said pseudo-random noise sequence with a baud rate or symbol rate substantially 342 times the horizontal scan line rate of an NTSC television signal is succeeded within said frame start signal by a signal corresponding to at least the initial portion of that pseudo-random noise sequence.

24. An electromagnetic wave signal comprising vestigial sideband modulation of a suppressed carrier in accordance with a baseband signal having a uniform baud rate or

symbol rate, said baseband signal composed of consecutive data segments each consisting of a prescribed integral number of symbol epochs, said consecutive data segments being divided into contiguous data frames each consisting of a prescribed integral number M of contiguous ones of said data segments, each said data frame characterized by beginning with a plurality N in number of said data segments used as a data frame header and concluding with a plurality (M-N) in number of said data segments that include consecutive multi-level symbols used for transmitting data, said data frame header in each said data frame including a respective ghost-cancellation reference signal that is composed of a plurality of PN sequences that are orthogonal to each other.

25. The electromagnetic wave signal of claim 24, wherein in each said data frame header said ghost-cancellation reference signal exhibits variation that is complementary to variation exhibited by a preceding other ghost-cancellation reference signal in the same said data frame header.

26. An electromagnetic wave signal comprising vestigial sideband modulation of a suppressed carrier in accordance with a baseband signal having a uniform symbol rate, said baseband signal composed of consecutive data segments each consisting of a prescribed integral number of symbol epochs, said consecutive data segments being divided into contiguous data frames each consisting of a prescribed integral number M of contiguous ones of said data segments, each said data frame characterized by beginning with a data frame header including a plurality N in number of contiguous ones of said data segments and concluding with a plurality (M-N) in number of said data segments including consecutive multi-level symbols used for transmitting data, said data segments each beginning with a respective data segment synchronization code of a similar prescribed character, said data frame header in each said data frame including a respective ghost-cancellation reference signal that begins in one data segment of said data frame header and finishes in the next-occurring data segment of said data frame header, said respective data segment synchronization code for said next data segment of said data frame header being subsumed in said respective ghost-cancellation reference signal that finishes therein.

27. The electromagnetic wave signal of claim 26, wherein in each said data frame header said ghost-cancellation reference signal exhibits variation that is

complementary to variation exhibited by another ghost-cancellation reference signal in the same said data frame header.

28. The electromagnetic wave signal of claim 27, wherein in each said data frame header said ghost-cancellation reference signal begins in a third-occurring data segment of said data frame header, finishes in a fourth-occurring data segment of said data frame header, and exhibits variation that is complementary to variation exhibited by another ghost-cancellation reference signal beginning after said respective data segment synchronization code in a second-occurring data segment of said data frame header.

29. The electromagnetic wave signal of claim 28, wherein in each said data frame header said ghost-cancellation reference signal begins in a third-occurring data segment of said data frame header, finishes in a fourth-occurring data segment of said data frame header, and exhibits variation that is complementary to variation exhibited by another ghost-cancellation reference signal beginning at the outset of a second-occurring data segment of said data frame header, said respective data segment synchronization code for said second data segment of said data frame header being subsumed in said other ghost-cancellation reference signal therewithin.

30. The electromagnetic wave signal of claim 27, wherein in each said data frame header said ghost-cancellation reference signal begins in a third-occurring data segment of said data frame header, finishes in a fourth-occurring data segment of said data frame header, and exhibits variation that is complementary to variation exhibited by another ghost-cancellation reference signal beginning in a first-occurring data segment of said data frame header and finishing in a second-occurring data segment of said data frame header, said respective data segment synchronization code for said second data segment of said data frame header being subsumed in said other ghost-cancellation reference signal.

31. A baseband digital signal having a uniform symbol rate substantially 684 times the horizontal scan line rate of an NTSC television signal that is apt to accompany said electromagnetic wave signal as a co-channel interfering signal, said baseband signal composed of consecutive data segments each consisting of a prescribed integral number of symbol epochs, said consecutive data segments being divided into contiguous data frames each consisting of a prescribed integral number M of contiguous ones of said data segments, each said data frame characterized by beginning with a plurality N in number of said data segments used as a data frame header and concluding with a plurality (M-N) in

number of said data segments composed of consecutive multi-level symbols used for transmitting data, said data frame header in each said data frame including a first ghost-cancellation reference signal and a second ghost-cancellation reference signal beginning substantially 1368 symbol epochs later than said first ghost-cancellation reference signal, which said first and second ghost-cancellation reference signal exhibit respective variations that are complementary to each other.

32. The baseband digital signal of claim 31, wherein each of said plurality (M-N) in number of said data segments composed of consecutive multi-level symbols used for transmitting data begins with a four-symbol data-segment-synchronizing code.

33. The baseband digital signal of claim 32, wherein said number M equals 1252 and said number N equals four.

34. The baseband digital signal of claim 32, wherein said number M equals 1294 and said number N equals four.

35. The baseband digital signal of claim 32, wherein said number M equals 1295 and said number N equals five.

36. The baseband digital signal of claim 31, wherein said number M equals 1302 and said number N equals four.

37. The baseband digital signal of claim 31, wherein said number M equals 1301 and said number N equals five.

38. The baseband digital signal of claim 31, wherein said first ghost-cancellation reference signal is composed of a plurality of PN sequences that are orthogonal to each other and contain equal numbers of symbols.

39. The baseband digital signal of claim 38, wherein said number N is at least four, and wherein said first ghost-cancellation reference signal begins before the end of the first data segment of each data frame.

40. The baseband digital signal of 38, wherein said number N is at least four, and wherein said first ghost-cancellation reference signal begins at the beginning of the second data segment of each data frame.

41. The baseband digital signal of claim 38, wherein said number N is at least four, and wherein said first ghost-cancellation reference signal begins a few symbol epochs after the beginning of the second data segment of each data frame.

42. The baseband digital signal of claim 31, wherein a frame start signal is included in the first data segment of each data frame, said first ghost-cancellation reference signal begins after said frame start signal, and said second ghost-cancellation reference signal begins substantially 1368 symbol epochs after said first ghost-cancellation reference signal begins.

43. The baseband digital signal of claim 42, wherein said number N is at least four, and wherein said first ghost-cancellation reference signal begins before the end of the first data segment of each data frame.

44. The baseband digital signal of claim 42, wherein said number N is at least four, and wherein said first ghost-cancellation reference signal begins at the beginning of the second data segment of each data frame.

45. The baseband digital signal of claim 42, wherein said number N is at least four, and wherein said first ghost-cancellation reference signal begins a few symbol epochs after the beginning of the second data segment of each data frame.

46. The baseband digital signal of claim 42, wherein said frame start signal comprises a pseudo-random noise sequence with a symbol rate substantially 342 times the horizontal scan line rate of an NTSC television signal.

47. The baseband digital signal of claim 46, wherein said pseudo-random noise sequence with a symbol rate substantially 342 times the horizontal scan line rate of an NTSC television signal is succeeded within said frame start signal by a signal corresponding to at least the initial portion of that pseudo-random noise sequence.

48. A baseband signal having a uniform symbol rate, said baseband signal composed of consecutive data segments each consisting of a prescribed integral number of symbol epochs, said consecutive data segments being divided into contiguous data frames each consisting of a prescribed integral number M of contiguous ones of said data segments, each said data frame characterized by beginning with a data frame header including a plurality N in number of contiguous ones of said data segments and concluding with a plurality (M-N) in number of said data segments including consecutive multi-level symbols used for transmitting data, said data frame header in each said data frame including a respective ghost-cancellation reference signal that is composed of a plurality of PN sequences that are orthogonal to each other.

49. The baseband signal of claim 48, wherein in each said data frame header said ghost-cancellation reference signal exhibits variation that is complementary to variation exhibited by a preceding other ghost-cancellation reference signal in the same said data frame header.

50. A baseband signal having a uniform symbol rate, said baseband signal composed of consecutive data segments each consisting of a prescribed integral number of symbol epochs, said consecutive data segments being divided into contiguous data frames each consisting of a prescribed integral number M of contiguous ones of said data segments, each said data frame characterized by beginning with a data frame header including a plurality N in number of contiguous ones of said data segments and concluding with a plurality (M-N) in number of said data segments including consecutive multi-level symbols used for transmitting data, said data segments each beginning with a respective data segment synchronization code of a similar prescribed character, said data frame header in each said data frame including a respective ghost-cancellation reference signal that begins in one data segment of said data frame header and finishes in the next-occurring data segment of said data frame header, said respective data segment synchronization code for said next data segment of said data frame header being subsumed in said respective ghost-cancellation reference signal that finishes therein.

51. The baseband signal of claim 50, wherein in each said data frame header said ghost-cancellation reference signal exhibits variation that is complementary to variation exhibited by another ghost-cancellation reference signal in the same said data frame header.

52. The baseband signal of claim 51, wherein in each said data frame header said ghost-cancellation reference signal begins in a third-occurring data segment of said data frame header, finishes in a fourth-occurring data segment of said data frame header, and exhibits variation that is complementary to variation exhibited by another ghost-cancellation reference signal beginning after said respective data segment synchronization code in a second-occurring data segment of said data frame header.

53. The baseband signal of claim 52, wherein in each said data frame header said ghost-cancellation reference signal begins in a third-occurring data segment of said data frame header, finishes in a fourth-occurring data segment of said data frame header, and exhibits variation that is complementary to variation exhibited by another ghost-

cancellation reference signal beginning at the outset of a second-occurring data segment of said data frame header, said respective data segment synchronization code for said second data segment of said data frame header being subsumed in said other ghost-cancellation reference signal therewithin.

54. The baseband signal of claim 51, wherein in each said data frame header said ghost-cancellation reference signal begins in a third-occurring data segment of said data frame header, finishes in a fourth-occurring data segment of said data frame header, and exhibits variation that is complementary to variation exhibited by another ghost-cancellation reference signal beginning in a first-occurring data segment of said data frame header and finishing in a second-occurring data segment of said data frame header, said respective data segment synchronization code for said second data segment of said data frame header being subsumed in said other ghost-cancellation reference signal.